

# Aida PCCARMAKE Aida PC LPR and Parking Violation with Car Make Recognition

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## Introduction

An object classification and detection system been developed through LILIN AI technology which can identify vehicle' s brands in real time. Besides, utilizing the NAV Client management system to obtain big data report °

| Aida PC LPR and Parking Violation with Car Make Recognition |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Industry                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Product code                                                | PCCARMAKE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Object recognition supported                                | ANPR and Parking Violation with Car Make Recognition of<br>Aston Martin, Audi, Acura, Alfa Romeo, Abarth, Austin Healey, Bentley, BMW, Bugatti, Buick, Borgward, Citroen, Chevrolet, Chrysler, CMC, Cadillac, Corvette, Dodge, Daihatsu, Dennis Eagle, Delorean, DMC, Datsun, Ferrari, Ford, FIAT, Fisker, GMC, Greyhound, Genesis, Gibson, Honda, Hyundai, Holden, Hino, Hummer, Infiniti, ISUZU, IVECO, Jaguar, Jeep, Kia, KenWorth, Lamborghini, Land Rover, Lexus, Lotus, Luxgen, Lincoln, Lotus, Lada, M-Benz, Mahindra, Mustang, Mazda, McLaren, Mini, Mitsubishi, Maserati, Nissan, Mercury, Mopar, Mack, MG, Morgan, Opel, Oldsmobile, Peugeot, Porsche, Pontiac (Firebird), Plymouth, Renault, Rolls-Royce, Rover, Skoda, Smart, Ssangyong, Subaru, Suzuki, SCANIA, Shelby, Saturn, Tesla, Toyota, Tata, Thunderbird, Sunbeam, Spyker, UD, Volkswagen, Volvo, Viper |
| Camera supported                                            | LILIN cameras (recommended) and ONVIF cameras                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Supported AI engines                                        | Car make/brand recognition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Aida processing power capability                            | Aida power 4 / ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rrecognition speed (per server)                             | 4 recogs / sec / ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Maximun objects recognized in a frame                       | 24 car makes / frame                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Zone confinguration                                         | 4 zones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Color recognition                                           | Logo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| AI recognition resolution requirement                       | Object 120x120 pixels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Object size filter                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SDK                                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Video resolution                                            | 1920 * 1080 or lower                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Language supported                                          | English / Traditional Chinese / Japanese / Italian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| User management with access rights                          | Three levels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Application                                                 | Traffic management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Recording (optional)                                        | Navigator Corporate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Number Plate Recognition              |                                                                                                                                          |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Vehicle detection speed               | 60kmh/37.2mph                                                                                                                            |
| Plate color                           | White, yellow, green, black, and red supported                                                                                           |
| States / provinces                    | USA, Middle East, Japan, Indonesia                                                                                                       |
| Angle of license plate                | Up to 15 degrees                                                                                                                         |
| Camera installation angle             | 0 to 30 horizontal degrees                                                                                                               |
| Support "-" recognition for plates    | Supported                                                                                                                                |
| Support OSD Unicode for number plates | Supported                                                                                                                                |
| NAV Detection area                    | Configurable                                                                                                                             |
| NAV the length of plate digits        | Minimum and maximum length configurable                                                                                                  |
| NAV exclusion list                    | Configurable                                                                                                                             |
| NAV quick search (playback)           | Configurable                                                                                                                             |
| NAV snapshots (playback)              | PIP and OSD text overlay                                                                                                                 |
| NAV alarm management on detection     | Full screen alarm popup, PC sound alarm, trigger IP camera digital output, email snapshots, redirect a PTZ preset recall, alarm snapshot |

| Traffic management |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Behavior           | Car make recognition ,Number plate recognition ,Parking violation |
| Behavior counter   | 64                                                                |

| Alarm Notification                              |                                                                             |
|-------------------------------------------------|-----------------------------------------------------------------------------|
| HTTP Post notification                          | LILIN smart IO box, LILIN LED display, third-party network device, or cloud |
| HTTP/HTTPs push notification with JPEG snapshot | 16                                                                          |
| Support Line notification                       | Via IFTTT                                                                   |
| Digital output                                  | Controllable via IP cameras or LILIN Network I/O Box                        |
| Car park counting for multi cameras             | LILIN LED display                                                           |
| Building capacity counting display              | LILIN LED display                                                           |

| System Sequirements |                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------|
| Suggested CPU       | Intel® i7 or above                                                                          |
| GPU/VPU supported   | Intel® HD Graphics 630 or above, PMH-XM2280, Intel® Movidius™ NCS2, NVidia 1050 4G or above |
| System memory       | RAM 16G (recommended)                                                                       |
| OS requirement      | Windows 10 with DirectX 12 installed                                                        |

Note: For recognition accuracy, each camera requires 6 recognitions per second. Each camera with AI Engine can cover number plate recognition of 1~2 vehicles for 1~2 lanes.

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